

MATERIAL SAFETY DATA SHEET

1.Product and company identification

1.1 Product identifiers

Product name : 4-chlorophenol

CAS-No. : 106-48-9

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis and Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Changzhou Extraordinary Pharmatech co.,LTD

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2.Hazard identification

2.1Classification of the substance or mixture

Acute toxicity - Oral, Category 4

Acute toxicity - Dermal, Category 4

Acute toxicity - Inhalation, Category 4

Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 2

2.2GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Warning

Hazard statement(s)

H302 Harmful if swallowed

H312 Harmful in contact with skin

H332 Harmful if inhaled

H411 Toxic to aquatic life with long lasting effects

Precautionary statement(s)

Prevention

P264 Wash ... thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

Response	P271 Use only outdoors or in a well-ventilated area.
	P273 Avoid release to the environment.
	P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor/...if you feel unwell.
	P330 Rinse mouth.
	P302+P352 IF ON SKIN: Wash with plenty of water/...
	P312 Call a POISON CENTER/doctor/...if you feel unwell.
	P321 Specific treatment (see ... on this label).
	P362+P364 Take off contaminated clothing and wash it before reuse.
	P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
	P391 Collect spillage.
Storage	none
Disposal	P501 Dispose of contents/container to ...

2.3Other hazards which do not result in classification

None

3.Composition/information on ingredients

3.1Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
4-chlorophenol	4-chlorophenol	106-48-9	none	100%

4.First-aid measures

4.1Description of necessary first-aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

Fresh air, rest. Refer for medical attention.

In case of skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention .

In case of eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

If swallowed

Rinse mouth. Do NOT induce vomiting. Refer for medical attention .

4.2Most important symptoms/effects, acute and delayed

Inhalation causes headache, dizziness, weak pulse. Ingestion causes irritation of mouth and stomach; headache, dizziness, weak pulse. Contact with eyes causes severe irritation and burning. Contact with skin causes irritation and burn; if absorbed, causes same symptoms as inhalation. (USCG, 1999)

4.3Indication of immediate medical attention and special treatment needed, if necessary

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. /Phenols and related compounds/

5.Fire-fighting measures

5.1Extinguishing media

Suitable extinguishing media

WATER, SPRAY, MIST, FOG, FOAM, DRY CHEMICAL

5.2Specific hazards arising from the chemical

Special Hazards of Combustion Products: Toxic and irritating hydrogen chloride and chlorine gases may form in fires. (USCG, 1999)

5.3Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

6.Accidental release measures

6.1Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

6.2Environmental precautions

Personal protection: chemical protection suit and filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Sweep spilled substance into covered containers. Carefully collect remainder. Then store and dispose of according to local regulations.

6.3Methods and materials for containment and cleaning up

Phenolic cmpd in wastewater are oxidized with hydrogen peroxide catalyzed by iron(3+)-iron(2+). When the wt ratio of phenol:hydrogen peroxide is 1:3 and iron 5-100 ppm, more than 95% of the

phenols are removed in 30 min from a 500 ppm phenol soln at pH 5-6 and 25-50°C. /Phenolic
cmpd/

7.Handling and storage

7.1Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use.Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.2Conditions for safe storage, including any incompatibilities

Separated from strong oxidants and food and feedstuffs. Well closed.Store in tightly closed containers in a cool, well ventilated area. Metal containers involving the transfer of this chemical should be grounded and bonded. Where possible, automatically pump liquid from drums or other storage containers to precess containers. Drums must be equipped with self-closing valves, pressure vacuum bungs, and flame arresters. Use only non-sparking tools and equipment, especially when opening and closing containers of this chemical. Sources of ignition such as smoking and open flames, are prohibited where this chemical is used, handled, or stored in a manner that could create a potential fire or explosion hazard. /Monochlorophenols/

8.Exposure controls/personal protection

8.1Control parameters

Occupational Exposure limit values

no data available

Biological limit values

no data available

8.2Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

8.3Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique(without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry

hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

Wear dust mask when handling large quantities.

Thermal hazards

no data available

9.Physical and chemical properties

Physical state	off-white to light tan crystals or powder
Colour	Needle like, white to straw-colored crystals
Odour	Characeteristic phenolic odor
Melting point/ freezing point	-20°C(lit.)
Boiling point or initial boiling point and boiling range	220°C(lit.)
Flammability	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit / flammability limit	no data available
Flash point	121°C
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	1% solution is acidic to litmus
Kinematic viscosity	5 cP at 50°C
Solubility	In water:2.7 g/100 mL (20 °C)
Partition coefficient n-octanol/water (log value)	log Kow = 2.39
Vapour pressure	1 mm Hg (49.8 °C)
Density and/or relative density	1.306g/mL at 25°C(lit.)
Relative vapour density	4.4 (Relative to Air)
Particle characteristics	no data available

10.Stability and reactivity

10.1Reactivity

no data available

10.2Chemical stability

Volatile with steam

10.3Possibility of hazardous reactions

COMBUSTIBLE WHEN EXPOSED TO HEAT OR FLAME. CHLOROPHENOLS, SOLID are incompatible with acid chlorides, acid anhydrides and oxidizing agents. Also incompatible with iron . Liquefy and darken in color at temperatures above 42.22°C.

10.4Conditions to avoid

no data available

10.5Incompatible materials

no data available

10.6Hazardous decomposition products

When heated to decomposition it emits toxic fumes of /hydrogen chloride/.

11.Toxicological information

Acute toxicity

Oral: LD50 Mouse oral 860 mg/kg. /From table/

Inhalation: no data available

Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

12.Ecological information

12.1Toxicity

Toxicity to fish: LC50; Species: Danio rerio (Zebra danio, length 2.5 cm); Conditions: freshwater, static, 22°C, pH 7.8-8, hardness 150 mg/L CaCO₃; Concentration: 3500-10000 ug/L for 24 hr

Toxicity to daphnia and other aquatic invertebrates: EC50; Species: Daphnia magna (Water flea, age <72 hr); Conditions: freshwater, static, 20°C, pH 7.8-8.2, hardness 200 mg/L CaCO₃, dissolved oxygen > or =2.27 mg/L; Concentration: 8070 ug/L for 24 hr (95% confidence interval: 5790-10340 ug/L); Effect: intoxication, immobilization />95% purity

Toxicity to algae: EC50; Species: Pseudokirchneriella subcapitata (Green algae, exponential growth phase, 50000 cells/mL); Conditions: freshwater, static, 21°C; Concentration: 38000 ug/L for 96 hr; Effect: growth, general /formulated product

Toxicity to microorganisms: no data available

12.2 Persistence and degradability

... Complete dechlorination and aromatic ring degradation of ... 4-chlorophenol ... by 2,4-D grown cells of an Arthrobacter species isolated from slit loam.

12.3 Bioaccumulative potential

BCFs of 6.0 to 18 for a test concn of 40 ppb and BCFs of 11 to 52 for test concn of 4 ppb was determined for 4-chlorophenol in carp and 42 days exposure(1). The BCF of 4-chlorophenol in goldfish ranged from 10 to 15(2,3). According to a classification scheme(4), these BCF's suggest the potential for bioconcentration in aquatic organisms is low(SRC).

12.4 Mobility in soil

Experimentally determined Kocs in various soil conditions range from 70 to 485.6(1,3,6). The Koc in clay loam soil was determined to be 71(1). A Koc of 70 was reported for 4-chlorophenol in Brookston clay loam soil(3). Adsorption of 4-chlorophenol to the organo-clay Bentone 24 has been shown to be pH sensitive; it was 48.5% adsorbed by Bentone 24 in aqueous solution at pH 8.0 and 7.7% adsorbed by Bentone 18C at pH 7.7(4). 4-Chlorophenol did not appear to be sorbed in an experiment in a sandy aquifer(5). A Koc of 485.6 was reported in a European silt loam soil(6). According to a classification scheme(2), Koc values of zero to 50 are very highly mobile, 50 to 150 are highly mobile, and 150 to 500 are moderately mobile.

12.5 Other adverse effects

no data available

13. Disposal considerations

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then

be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

14.Transport information

14.1UN Number

ADR/RID: UN2020

IMDG: UN2020

IATA: UN2020

14.2UN Proper Shipping Name

ADR/RID: CHLOROPHENOLS, SOLID

IMDG: CHLOROPHENOLS, SOLID

IATA: CHLOROPHENOLS, SOLID

14.3Transport hazard class(es)

ADR/RID: 6.1

IMDG: 6.1

IATA: 6.1

14.4Packing group, if applicable

ADR/RID: III

IMDG: III

IATA: III

14.5Environmental hazards

ADR/RID: yes

IMDG: yes

IATA: yes

14.6Special precautions for user

no data available

14.7Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

no data available

15.Regulatory information

15.1Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
4-chlorophenol	4-chlorophenol	106-48-9	none
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.

16.Other information

This SDS was prepared sincerely on the basis of the information we could obtained, however, any warranty shall not be given regarding the data contained and the assessment of hazards and toxicity. Prior to use, please investigate not only the hazards and toxicity information but also the laws and regulations of the organization, area and country where the products are to be used,

which shall be given the first priority.

The products are supposed to be used promptly after purchase in consideration of safety. Some new information or amendments may be added afterwards. If the products are to be used far behind the expected time of use or you have any questions, please feel free to contact us. The stated cautions are for normal handling only. In case of special handling, sufficient care should be taken, in addition to the safety measures suitable for the situation. All chemical products should be treated with the recognition of "having unknown hazards and toxicity", which differ greatly depending on the conditions and handling when in use and/or the conditions and duration of storage. The products must be handled only by those who are familiar with specialized knowledge and have experience or under the guidance of those specialists throughout use from opening to storage and disposal. Safe usage conditions shall be set up on each user's own responsibility.

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Changzhou Extraordinary Pharmatech co., LTD not be held liable for any damage resulting from handling.